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ABSTRACT

GRADES OR AGES: Grade 4. SUBJECT MATTER: English, spelling, handwriting, reading, social studies, arithmetic, science and health, art, and physical education. ORGANIZATION AND PHYSICAL APPEARANCE: The guide devotes one chapter to each subject, with an introductory chart giving the suggested daily and weekly time allotments. The art and physical education programs are presented in chart form. The guide is lithographed and spiral bound with a soft cover. OBJECTIVES AND ACTIVITIES: The objectives are listed for each subject, together with detailed suggestions for activities. INSTRUCTIONAL MATERIALS: Precise information is given on all textbooks and other material required. STUDENT ASSESSMENT: No special provision is made for evaluation. (MBM)

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CHEYENNE PUBLIC SCHOOLS

CHEYENNE, WYOMING

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GUIDE BOOK

FOURTH GRADE

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SP007166

FOURTH GRADE GUIDE

FOREWORD

This guide book is a revision of the previous outline for this grade. The outline does not designate specific methods nor does it indicate day-by-day progress. It does outline a general pattern of material, and the goals that are to be approached.

Teachers are expected to conform to the indicated pattern and to assist the student to reach the designated goals insofar as his ability will permit.

Betty Lou Pagel

Director, Elementary Education

Revised 1968

Beth Long

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Superintendent of Schools

Cheyenne, Wyoming

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SUGGESTED TIME ALLOTMENT

FOURTH GRADE

(REVISED 1968)

	<u>Minutes Per Day</u>	<u>Minutes Per Week</u>
Routine Details (opening, planning period)	10	50
Reading and Phonics	55	275
Spelling	15	75
Writing	15	75
English	30	150
Arithmetic	50	250
Social Studies	50	250
Science and Health (four days per week)	45	180
Art (one day per week)		45
Recess and Physical Education	20	100
Music	25	125

ENGLISH
GRADE FOUR

Following the use of the book in several pilot studies in fourth grade, the Roberts English Series is being used system-wide for the first time.

In-service training will be provided to help teachers plan and present the material to their individual classes. The program is experimental and teachers should be reassured by the fact that the book is organized for a systematic progression from unit to unit. The publishers suggest, in fact, that "One may go back for reteaching of parts that have not been well enough learned but one should not go forward skipping intermediate steps".

Pupils in grade four will need a review of the third grade program. Pages 3-16 in the fourth grade workbook provide for such review. In addition, each textbook, pp. 304-323, provides a summary of the syntax and the sound and spelling program of third grade. A glossary of terms previously introduced is included on pp. 322-323. It might be that this review needs to be carried on through September and October before the forward movement on fourth grade level can begin. The diagnostic test, pp. 1-2 in the workbook, should be given at the end of the review of third grade material.

A workbook is provided for each pupil. These workbooks contain extensive further practice and review of the sound and spelling program and the grammar program. They also contain a complete testing program for the year.

SPELLING GRADE FOUR

Basic Text

Kottmeyer, William, and Ware, Kay, Basic Spelling Goals (1960 or 1964 edition),
Webster Division, McGraw-Hill Book Company, St. Louis.

or

Kottmeyer, William, and Claus, Audrey, Basic Goals in Spelling (1968 edition),
Webster Division, McGraw-Hill Book Company, St. Louis.

Emphasis for Grade Four

1. Primary purpose for teaching spelling is to develop spelling power.
2. Units of words are arranged to present sequentially the generalizations regarding phonetic and structural characteristics of words.
3. Pupils are led to observe the similarities of sound and spelling in words and to formulate the generalizations for themselves.
4. Dictionary skills are systematically presented from unit to unit so that, in the normal course of the year's activities, the pupil will have learned to use the dictionary effectively.
5. When a pupil's attention is being focused upon a spelling generalization, he learns at the same time the dictionary convention for dealing with that particular spelling element.
6. Weekly proofreading exercises are included in each unit so that pupils may have frequent and systematic practice in looking critically for writing errors in spelling and the other writing conventions. All pupils except those who must struggle with the weekly list can participate profitably in proofreading exercises.
7. Extra words from the content areas are provided each week for the good spellers. These extra words provide additional spelling activity for the pupils who are able to spell the regular words on the Wednesday trial tests.

Procedure for Studying a Word

1. Look at the word carefully.
2. Check the word in a dictionary if not sure of the meaning or of the pronunciation.
3. Say the word distinctly.

4. Think how to spell the word:
 - a. How does it start?
 - b. How many sounds are heard?
 - c. Are there any silent letters?
 - d. Is there a sound spelled with two letters?
 - e. What are the vowel sounds?
 - f. How many syllables are there?
 - g. Is there a suffix?
 - h. If so, what is the root word?
 - i. Is the root word changed when the suffix is added?

5. Write the word.

6. Practice writing the word. Say the word as it is written.

Extra Activities for Superior Spellers

1. Divide the group into committees to make vocabulary charts showing diacritical marks and definitions for arithmetic, science, social studies, and health.
2. Compile a classroom or individual dictionary.
3. Using words from the weekly spelling list, write some form of creative work such as a news story, short story, riddle, or essay.
4. Crossword puzzles.

Provisions for Poor Spellers

1. This group works slowly and needs more individual help.
2. Achievement is limited and progress may be slow.
3. Reduce the word list in accordance with the child's ability.
4. Word list should include commonly spelled words found in daily written work.
5. Follow same "Procedure for Studying a Word" as superior and regular spellers.

HANDWRITING

GRADE FOUR

Basic Materials

Text: Freeman, Frank N., Seeing Our Progress (Grade Four Recorder), The Zaner-Bloser Company, Columbus, Ohio.

Guide: Freeman, Frank N., Reference Manual for Teachers, Grades One Through Four, The Zaner-Bloser Company, Columbus, Ohio.

Alphabet Strips for Cursive Writing (Wall Cards)

Goals for Teachers

1. Learn the capabilities of the class early in the year.
2. Adjust the writing processes to their capacities.
3. Give considerable time to teaching the correct formation of cursive letters-- the skill is still frail.
4. Observe all the visual processes when presenting a lesson.
5. Give special attention to name writing.
6. Encourage child expression in diagnosing weaknesses.
7. Lead the child to accept the responsibility for his progress.
8. Impress upon child the importance of listening well and following directions.
9. Vary instruction to maintain interest.
10. Make frequent comparisons with former writing attempts.
11. Recall the use of manuscript writing for suitable purposes -- labels, posters, and notices.
12. Watch carefully in this grade the problem of inverted hand position. In this incorrect position, the hand is curved inwardly with pencil pointing away from the shoulder.

Emphasis for Grade Four

1. Rhythmic practice on each letter of the cursive writing alphabet is important. The letter forms need to be strengthened and established in the nerve-muscle responses of the children.
2. As each letter is practiced and its rhythmic pattern becomes more firmly established, the slant-strokes should be observed and strengthened.
3. Ease in the mechanics of writing is acquired through well-planned practice on the letter forms and their joinings with other letters.
4. Size of the writing is slightly reduced as compared to grade three. Proportions remain the same, however.
5. Spacing between letters, between words, and between sentences affects the legibility of handwriting.
6. Combine spacing and size in practice so that children's writing will not be cramped and tight-looking.
7. Standard speed for grade four is about 50 letters per minute.
8. Correct positions of the body, paper, hand, and pencil are basic techniques to be acquired for development of efficient and effective handwriting.
9. Much large-sized letter practice is recommended to help boys and girls fix the rhythmic pattern for a letter in the large muscles before transferring the motion to the smaller muscles.

UPPER ELEMENTARY READING PROGRAM

Objectives

Objectives for teaching reading in the middle grades center on the essentials that help children grow in competence in the act of reading:

1. To help pupils become increasingly adept in using context clues.
2. To stress word-analysis skills and understandings to help children grow steadily in ability to (a) hear and identify sounds, syllables, and accent; (b) associate vowel and consonant sounds with appropriate letters of the alphabet; (c) use spelling patterns and accent as clues to correct pronunciation of words; and (d) understand the structure of words and their roots and affixes.
3. To provide opportunity for increased proficiency in using a dictionary and an ever-enlarging knowledge of words and their meanings.
4. To focus children's attention on the many ways our language grows and changes.
5. To teach content subjects in a way which reinforces insights and skills taught in reading itself.
6. To teach effective reading of informative reading matter and reacting critically to questionable statements.
7. To help pupils to begin mastering the proper techniques for skimming and pre-viewing reading materials.
8. To provide materials and classroom experiences which will entice pupils into reading on their own the worthy juvenile literature intended for their use.
9. To stress need for pupils to demand meaning from what is read and need for setting purposes for reading.

Reading Skills and Abilities

The program of reading skills for the middle grades provides for steady growth in ability to:

1. Associate sound and meaning with a printed symbol instantaneously.
2. Perceive relationships between context meaning.
3. Use context clues to identify printed words and determine appropriate meaning.

4. Identify printed words by using consonant substitution, word analysis, and context:
 - a. associate consonant and vowel sounds with letters that commonly represent them
 - b. perceive syllables and accent in spoken words
 - c. use spelling patterns, accent, and context as clues to vowel sounds
 - d. use context clues to determine accent
 - e. identify inflected, derived, and compounded forms and contractions
 - f. identify root words in inflected, derived, and compounded forms
5. Derive meaning and pronunciation of words in a dictionary:
 - a. identify root words in inflected or derived forms
 - b. comprehend definitions
 - c. use context to select appropriate definitions and determine accent or function
 - d. use a pronunciation key to interpret dictionary symbols
 - e. use dictionary symbols to derive correct pronunciation
6. Recognize purpose for reading
7. Comprehend literal and implied meanings of words, phrases, sentences, and longer passages.
8. Perceive relationships: sequence, cause-effect, part-whole, time, place, time-place, values, analogous, anachronistic, general-specific, class, size, between details, between main ideas and supporting details, between units of meaning in different word form.
9. Follow sequences of ideas
10. Note or recall details
11. Grasp main idea and identify supporting details
12. Identify internal clues as means of recognizing role of individual paragraphs in total pattern of writing.
13. Form and react to sensory images: visual, auditory, olfactory, kinesthetic, tactile
14. Make and check inferences
15. Anticipate action, emotional response, or outcome
16. Compare and contrast

17. Sense emotional reactions, infer motives, and identify personal traits of story characters
18. Evaluate actions and personal traits of story characters
19. Identify points of view and attitudes of story characters
20. Organize and summarize ideas
21. React to content, link it to personal experience, and assimilate ideas
22. Evaluate, make judgments, draw conclusions, and generalize in light of author's purpose, mood, or attitude: relevancy of material for purpose, inconsistencies, "loaded" words, fact versus opinion, characterization, elements of style or plot structure, data assembled from a variety of sources.
23. Follow sequence and identify plot structure
24. Recognize and respond to author's purpose
25. Recognize and respond to clues to pace, mood, pitch, intonation, stress, and rate in oral reading
26. Locate information for specific purposes:
 - a. recognize function of different kinds of reference materials
 - b. select and evaluate kind of reference material needed
 - c. recognize the function of alphabetical arrangement and guide words
 - d. use alphabetical sequence to locate information
 - e. recognize the function of a table of contents, chapter title, section titles, and topic headings
 - f. interpret charts, graphs, and diagrams
 - g. identify key words in questions or problems
 - h. skim to locate specific words or synonyms of key words, sentences or passages for different purposes
 - i. preview all or parts of selections, chapters, or books

Understandings of Language

Understandings that underlie the skills and abilities developed in middle grade reading are:

1. Printed language represents spoken language.
2. Spoken words are patterned arrangements of consonant and vowel sounds.
3. The same sound may be represented by more than one sound and the visual clue to vowel sound is the spelling.

4. In words of more than one syllable, one syllable is accented more than the other or others.
5. Visual clues to vowel sounds usually apply only in accented syllables.
6. The vowel sound heard most frequently in unaccented syllables is the schwa, which may be represented by any vowel letter.
7. Most words have more than one meaning, and the clue to the meaning is usually the context in which the word is used.
8. A root word retains one of its meanings in an inflected, derived, or compounded form.
9. An affix has a meaning and/or function.
10. The spelling of a word may change before an ending or suffix.
11. Certain suffixes are clues to accent.
12. Although the intonations of speech are incompletely presented in printed language, punctuation and certain other graphic devices provide clues.
13. Language grows and changes as new words are coined for new products, inventions, and experiences.
14. Words are borrowed from other languages and old words take on new meanings and uses.

Attitudes, Habits, and Interests

In the middle grade reading program children are motivated to:

1. Demand meaning from what is read
2. Adopt an inquiring attitude
3. Scrutinize the whole word before analysis
4. Use understandings, scrutiny of whole word, word-analysis skills, and context to identify unfamiliar words while reading
5. Read to the end of a sentence, paragraph, or total selection to comprehend meaning or grasp the main idea
6. Seek and select a book to satisfy personal interests or specific purposes

7. Set purposes for reading and adjust reading behavior to the reader's purpose and nature of the content.
8. Select material appropriate to specific needs, interests, or purposes
9. Read critically for a variety of purposes
10. Turn to a dictionary to determine or check meaning and/or pronunciation of words
11. Widen scope of interests to include fiction, nonfiction, poetry, drama

Appreciation and Tastes

In the middle grade reading program, appreciation of what an author says and how he says it and a cultivation of reading tastes is fostered as children learn to:

1. Recognize a well-constructed plot
2. Recognize and react to behavior and values of story characters
3. Recognize and react to convincing characterization
4. Recognize and identify ways an author portrays or reveals character:
 - a. describes the character, his surroundings, and his reactions to the surroundings
 - b. shows the character in action
 - c. reveals the thoughts of a character
 - d. includes conversation in which a character engages
 - e. tells what others say or think about a character and what a character says or thinks about others
 - f. reveals the characters' reactions to one another
5. Recognize inherent value or superficiality of theme
6. Identify and evaluate elements of style used by an author
 - a. figurative, picturesque, and idiomatic language
 - b. colloquialism, slang, and dialect
7. Identify and evaluate author's purpose and the techniques used to achieve his purpose.

Review Exercises

Reading instruction in the middle grades must carry forward and build upon competence developed in the primary grades. Some children, however, may not have mastered these skills sufficiently to read successfully on their own. A section of the Teacher's Edition of Ventures, Book 4 Basic Reader published by Scott, Foresman and Company, provides step-by-step procedures for reteaching and reinforcing word perception skills taught at preceding level. Needs of the children will determine how these exercises are used. With some pupils a brief review, using a few of the suggestions in each section, will suffice. With others it may be necessary to use a series of related exercises to introduce skills children have missed.

Review exercises in Ventures Teacher's Edition are :

- | | |
|-------------------------------|-------------|
| 1. Using Context Clues : | pp. 315-318 |
| 2. Using Structural Analysis: | pp. 319-328 |
| 3. Using Phonetic Analysis: | pp. 328-339 |
| 4. Using a Dictionary: | pp. 340-355 |

Teacher's Manuals

Systematic use of the teacher's manual for the reading text will insure the presentation of skills in an orderly developmental pattern. The manuals suggest procedures for introducing selections, extending interpretation of them, increasing competence in skills and abilities that pertain to reading, encouraging personal reading, and providing for individual differences.

A story a day is not the goal. The needs of the group will help the teacher decide how many reading periods are needed to successfully complete all the important steps in the lesson.

Workbooks

Workbooks are available for and should be used with the basal readers.

Workbooks provide special practice on skills that have been introduced either in the reader or by the teacher as proposed in the teacher's guide.

It is vital that workbooks be used in such a way that the pupil understands how to proceed in doing the exercise, that the responses are carefully checked, and that the pupil understands why his mistakes are mistakes.

Tests

Tests are available from the stockroom for Scott, Foresman and Houghton Mifflin basal readers. These tests should be administered as soon as the book is completed and individual results of the tests should be recorded on the Cumulative Individual Record for Basic Reading tests.

Dictionary Skills

The Thorndike-Barnhart Dictionary, which was introduced at the third grade level, will continue to be used in fourth grade. The lessons that appear at the front of the dictionary are planned for children who are learning how to use it. These lessons are organized in four sections -- the first designed to help pupils locate words in a dictionary, the second to help them find and use definitions, the third to help them interpret pronunciations, and the fourth to help them use a dictionary for spelling and writing.

AVAILABLE READING TEXTS FOR UPPER ELEMENTARY PROGRAM

<u>Reading Level</u>	<u>Title</u>	<u>Publisher</u>
Book 2-2	Town and Country	Allyn & Bacon
	Over a City Bridge	American
	Open Doors	American
	Around the Corner	Ginn & Company
	Friendly Village	Harper Row
	From Fins to Feathers	Harper Row
	On We Go	Houghton Mifflin
	Basic Reading 2-2	Lippincott
	Just For Fun	Lyons & Carnahan
	Shining Bridges	MacMillan
	More Friends Old and New	Scott, Foresman
	Wide Horizons (Book 2)	Scott, Foresman
	(Enrichment)	
Book 3-1	Moving Ahead (Remedial)	Scott, Foresman
	People on Parade	Winston
	Magic Windows	Allyn & Bacon
	Beyond Treasure Valley	American
	Finding New Neighbors	Ginn & Company
	Through the Green Gate	Harper Row
	From Faraway Places	Harper Row
	Meadow Green	Heath & Company
	Looking Ahead	Houghton Mifflin
	Basic Reading 3-1	Lippincott
	Stories from Everywhere	Lyons & Carnahan

<u>Reading Level</u>	<u>Title</u>	<u>Publisher</u>
Book 3-1 (cont.)	Better Than Gold	MacMillan
	Roads to Follow	Scott, Foresman
	Splendid Journey (Remedial)	Scott, Foresman
	Into the Wind	Winston
Book 3-2	Story Caravan	Allyn & Bacon
	Along Friendly Roads	American
	Open Roads	American
	Friends Far and Near	Ginn & Company
	If I Were Going	Harper Row
	From Bicycles to Boomerangs	Harper Row
	Climbing Higher	Houghton Mifflin
	Basic Reading 3-2	Lippincott
	Once Upon a Storytime	Lyons & Carnahan
	More Than Words	MacMillan
	More Roads to Follow	Scott, Foresman
	Wide Horizons (Book 3) (Enrichment)	Scott, Foresman
Book 4	Speeding Away (Remedial)	Scott, Foresman
	Across the Valley	Winston
	Open Gates (Transition)	Allyn & Bacon
	Believe and Make Believe	Allyn & Bacon
	American Adventures	American
	Paths to Follow	American
	Roads to Everywhere	Ginn & Company
	Trade Winds	Harper Row
	From Codes to Captains	Harper Row
	Peacock Land	Heath & Company
	High Roads	Houghton Mifflin

<u>Reading Level</u>	<u>Title</u>	<u>Publisher</u>
Book 4 (cont.)	Basic Reading 4	Lippincott
	Meeting New Friends	Lyons & Carnahan
	The Magic Word	MacMillan
	Just Imagine (Transition)	Scott, Foresman
	Ventures	Scott, Foresman
	Wide Horizons (Book 4) (Enrichment)	Scott, Foresman
	Open Highways (Book 4) (Remedial)	Scott, Foresman
	Around the Bend (4-1)	Winston
	Above the Clouds (4-2)	Winston
Book 5	Finding the Way	Allyn & Bacon
	Adventures Here and There Frontiers to Explore	American American
	Trails to Treasure	Ginn & Company
	Crossroads	Harper Row
	From Actors to Astronauts	Harper Row
	Silver Web	Heath & Company
	Sky Lines	Houghton Mifflin
	Basic Reading 5	Lippincott
	Days of Adventure	Lyons & Carnahan
	Bold Journeys	MacMillan
	Vistas	Scott, Foresman
	Wide Horizons (Book 5) (Enrichment)	Scott, Foresman
	Open Highways (Book 5) (Remedial)	Scott, Foresman

<u>Reading Level</u>	<u>Title</u>	<u>Publisher</u>
Book 6	Arrivals and Departures	Allyn & Bacon
	Adventures Now and Then Widening Horizons	American American
	Wings to Adventure	Ginn & Company
	Seven Seas From Coins to Kings	Harper Row Harper Row
	Treasure Gold	Heath & Company
	Bright Peaks	Houghton Mifflin
	Basic Reading 6	Lippincott
	Stories to Remember	Lyons & Carnahan
	Into New Worlds	MacMillan
	Cavalcades	Scott, Foresman
	Wide Horizons (Book 6) (Enrichment)	Scott, Foresman
	Open Highways (Book 6) (Remedial)	Scott, Foresman
Book 7	High Trails	Allyn & Bacon
	Adventure Bound	Houghton Mifflin
	Basic Reading 7	Lippincott
	A Call to Adventure	Lyons & Carnahan
	Parades (7-1)	Scott, Foresman
	More Parades (7-2)	Scott, Foresman
Book 8	Adventures for Readers - Book I	Harcourt, Brace
	Widening Views	Allyn & Bacon
	Journey Into America	Houghton Mifflin
	Panoramas (8-1) More Panoramas (8-2)	Scott, Foresman Scott, Foresman

SOCIAL STUDIES

GRADE FOUR

Over-all objective of the new social studies is to give children a broad understanding of human society for effective citizenship in a changing world. The program is an inter-disciplinary one with concepts drawn from history, geography, economics, political science, sociology, and anthropology.

In view of the modern trends in the field, this will be a year of experimentation and study of curriculum in the area of elementary social studies in the Cheyenne Public Schools. New textbooks from various publishers will be used in pilot studies.

Those teachers not using experimental books will continue to use the old text and units of study.

Geographical Concepts for Grade IV

Orientation in the world through use of globe.

Establish globe-map relationship.

The earth -- shape, motions, distributions of land and water (retaught).

Meaning of Equator, Tropic of Cancer, Tropic of Capricorn, North Pole, South Pole, Arctic Circle, Antarctic Circle, hemisphere.

Meaning of city, county, state, country, continent.

Recognition and description of the elements of weather and climate.

Land Forms -- recognition of and description of major types.

Recognition and description of natural resources, providing food, shelter, clothing, heat, and power.

Recognition and description of different nationalities and ways of living.

Understand the meaning of color and shading on simple physical maps; recognize major symbols.

Simple scale of mile.

Understand the use of Northwest, Northeast, Southeast, and Southwest; use of compass.

Use of grid lines to locate places on a map.

Spatial arrangements.

Historical Concepts for Grade IV

Past time, present time.

Background of Wyoming.

Relating the past to here and now.

Background for current events.

Background of our American heritage and democratic form of government.

Physical environment and different cultural heritage influenced and built different national patterns.

Relationships between individuals and events of the past and present.

Social Understandings for Grade IV

Inter-relatedness and inter-dependence of men and societies.

Change is natural and one must adjust.

There is a reason for behavior.

Good human relations are based upon respect for human personality and obeying the rules.

Willingness to abide by decision of majority and respect for rights and privileges of the minority are basic to democracy.

Importance of natural resources and the need for conservation.

Loyalty in democratic principles.

Appropriate evidence must be collected and considered before decisions are made.

Respect for other cultures.

Geographic environment influences the ways in which people live.

People are more alike than they are different.

All communities are alike in some way.

The earth has a great variety of lands and ways of living.

Sense of social responsibility.

Close relationship of people today due to transportation.

Attitudes, Values, and Ideals for Grade IV

Awareness of membership in world community.

Recognition of the importance of courteous behavior.

Respect others' abilities and for all peoples.

Sympathize with others' problems.

Tolerate different points of view.

Man adjusts to climate and environment.

Need for care and watchfulness over the resources nature has given us.

Concern for the welfare of others.

Developing a sense of values which one uses in making choices.

Developing an attitude of open-mindedness.

Each one has a responsibility to work for a better life.

People keep their own rights by respecting the rights of others.

Skills, Abilities, and Habits for Grade IV

Weighing evidence presented in different accounts of the same subject.

Drawing conclusions from facts.

Practicing desirable social relationships.

Reading for literal facts, organization, and drawing conclusions.

Use of compass.

Making maps.

Memorization.

Using map legends and scale of miles.

Using the globe and maps to get specific information; use of special purpose maps.

Using geographical terms and building social studies vocabulary.

Using the tools for social studies -- books, maps, globes, pictures, encyclopedia, etc.

Working cooperatively in committees.

Evaluating individual and group growth.

Using discussion skills.

Reporting orally.

Outlining.

Sharing information, ideas, and time.

Reading and making charts and graphs.

Using methods of orderly study.

At each grade level, the concepts, understandings, and skills of the previous levels will be reviewed and retaught. Developing effectiveness in these areas is a process that covers many years.

Basic Text

Goetz, Delia, At Home Around the World, Ginn and Company, Boston.

Cornthwaite, David, Teachers' Manual and Key to Accompany At Home Around the World, Ginn and Company, Boston.

Units of Study

- Unit I: At Home on an Island in the Pacific Ocean (three weeks)
- Unit II: At Home in the Mountains in Ecuador (four weeks)
- Unit III: At Home on a Tundra in Alaska (three weeks)
- Unit IV: At Home by a Fiord in Norway (four weeks)
- Unit V: At Home on a Desert in Saudi Arabia (three weeks)
- Unit VI: At Home by a River in India (three weeks)
- Unit VII: At Home on a Ranch in Argentina (four weeks)
- Unit VIII: At Home in a Polder in the Netherlands (four weeks)

For Units I-VIII, see Teachers' Manual and Key for purposes of units and new vocabulary; also, specific suggestions for developing learning experiences, geographic understandings, classroom exhibits, notebooks, charts, art activities, culminating activities, and unit tests for evaluating major learnings of the unit.

- Unit IX: Wyoming (six weeks)

Basic Text: Wyoming's People by Clarice Whittenburg

Purposes for Unit:

To know the early history of Wyoming, including the Indians, explorers, and settlers.

To know how people live in Wyoming.

To know industries, towns, rivers, and places of interest.

CURRENT EVENTS

The study of current events and contemporary affairs is an integral part of any social studies program. Without it the program is inadequate and incomplete. It is through this study that much of the material taught in the social studies takes on significant meaning for the pupil. This reason alone would require a social studies program with a strong emphasis on the study of current events. Other reasons for such a study in the social studies program are those which help the pupil to:

- . grow increasingly sensitive to the world around him
- . evaluate immediate experience by a growing system of beliefs and values rooted in the inherent worth of the individual and the ideals of a democratic society
- . gain insight into the affairs of the society of which he is a member and to develop civic intelligence
- . think about events and his place in them
- . gain understanding of some of the thoughts, beliefs, and achievements of noted living men and women
- . form opinions based on facts and the study of issues
- . evaluate and use various sources of information.

In selecting current events or contemporary affairs material, the twin criteria of suitability and reliability should be kept in mind. The age, experience, and understanding of the class are important factors to consider.

In using current events material, the pupils should be made aware of the difference between truth and rumor, fact and opinion, verity and propaganda, and the particular viewpoint that an individual or organization is likely to express.

FOURTH GRADE ARITHMETIC

Text: Morton, et al., Modern Arithmetic Through Discovery, Silver Burdett Company, Chicago, 1963.

Suggested Material To Be Covered and Approximate Time Allotment:

First Quarter -- pp. 1-57

Learning Stage 1 - pp. 1-29

- Using number sentences
- Sentences using the same three numerals
- Writing examples
- Using one sentence as a key to others
- Using the number line to add and subtract
- Writing number sentences for problems
- Hundreds, tens, and ones
- Thinking of numbers in different ways
- Adding and subtracting hundreds, tens, and ones
- Amounts of money
- Adding and subtracting amounts of money
- Seeing patterns in addition and subtraction
- Adding more than two numbers
- Roman numerals
- Using an abacus to add with Roman numerals

Learning Stage 2 - pp. 30-57

- Using standard units of measure
- Different names for the same number
- Addition and subtraction with regrouping
- Deciding how to solve problems
- Pennies, dimes, and dollars
- Seeing relationships
- Number sentences for problems
- Finding what numerals are missing
- Ways of adding more than two numbers
- Solving problems

Second Quarter - pp. 58-116

Learning Stage 3 - pp. 58-85

- Multiplying and dividing
- Writing multiplication and division sentences
- Multiplying and dividing on the number line
- Writing number sentences for problems
- Groups of related sentences
- What to do first in a number sentence
- Multiplying and dividing tens and hundreds

Multiplying hundreds, tens, and ones
Dividing hundreds, tens, and ones
Deciding what to do to solve a problem
Thousands and ten thousands
Understanding what the places in a numeral mean
Writing examples for problems

Learning Stage 4 - pp. 86-116

Different names for a fractional number
Parts of the number in a set
Fractions on the number line
Discovering and using multiplication and division facts
Multiplying and dividing tens and ones
Making multiplication and division tables
Understanding problems
Two purposes for dividing
Discovering new multiplication and division facts
Using skill in problem solving
Ways to discover or rediscover facts

Third Quarter - pp. 117-202

Learning Stage 5 - pp. 117-141

Measuring to the nearest fraction of an inch
Measuring weight
Multiplication in vertical form
Finding remainders on the number line
Using the sign $<$ in number sentences
Division with remainders
Finding the quotient in the fewest possible steps
Solving problems

Learning Stage 6 - pp. 142-172

Using a thermometer scale
Measuring liquids and weight
Multiplying ones and tens
Regrouping
Multiplying and dividing tens and hundreds
Learning more about division
Tens and ones in the quotient
Finding quotients the shortest way
Dividing amounts of money
Understanding multiplication and division

Learning Stage 7 - pp. 173-202

Telling and writing time
The calendar
Pints, quarts, pecks, bushels, tons
Practicing addition and subtraction
Writing sentences and solving problems
Practice in multiplying and dividing
Using money
Geometry
Points, lines, line segments
Rays and angles
Triangles and rectangles
The circle
The plane
Shapes in everyday life
The sphere
Picture graphs
Bar graph
Line graphs

Fourth Quarter - pp. 203-282

Learning Stage 8 - pp. 203-231

Learning more about multiplication
Learning more about division
Regrouping as you multiply
Checking multiplication
Using what you have learned
Multiplying and dividing by tens and ones
Deciding whether to add, subtract, multiply, or divide

Learning Stage 9 - pp. 232-261

Numerals for equal parts of a whole
Fractions on the number line
Comparing fractional numbers
Equivalent fractions
Adding fractional numbers
Using the number line
Finding sums in lowest terms
Subtracting fractional numbers
Finding other names for fractional numbers
Finding remainders in lowest terms
Adding and subtracting with fractions that mean more than one
Making and using a scale drawing
Practice with whole numbers
Money

Learning Stage 10 - pp. 262-282

Understanding hundred thousands and millions

Telling time to the second

Using averages in problems

Temperature

Measuring by the mile

SCIENCE AND HEALTH

GRADE FOUR

Objectives:

To provide a framework of concepts, built up through experiences, on which to build future learnings.

To develop a balanced selection of concepts from each area of science in a spiral progression throughout the grades.

To gear the science program to the physical, mental, and emotional needs of children.

To relate the science program to the total school program, particularly the curriculum areas of social studies, health, and mathematics.

To provide the scientific literacy and rational attitudes that are essential for responsible citizenship in this scientific age.

Experiments:

Motivation for each of the experiments found in the text arises from the problem in which the children are currently interested. "Let's see how we can do it" or "We can find out" is often the motivating statement. The ideas gained through the activities can be applied to the children's everyday living.

Each time a new unit is to be introduced, the teacher should list all the necessary equipment and materials for experiments on the chalkboard. Together with the children, the teacher should plan how to obtain things that are not included in the Lab Stacks.

Most of the activities are simple, safe, short, and require only common materials, easily obtained. Don't hesitate to assign such activities to committees and interest groups, to prepare and demonstrate to the class, under your guidance.

Basic Texts:

Schneider, Herman and Nina, Science in Your Life, D. E. Heath and Company, Boston, 1968.

Bauer, W. W., et al., Going on Ten, Scott, Foresman and Company, Chicago, 1958.

UNITS OF STUDY

Unit I: Health in Everyday Living, How Should We Play?, and How Can We Keep Safe? (3 weeks)

Text: Going on Ten, pp. 8-24, pp. 62-80, and pp. 136-162

Guide: Going on Ten, pp. 40-51, pp. 72-83, and pp. 114-128

The section on lesson plans in the Guidebook for Going on Ten includes information for building background, interpreting the text, enriching activities, books for children, and information for the teacher. Additional references are presented on pp. 156-160 of the Guidebook. Health words from the units are included in the Glossary, pp. 214-220 in the Pupils' Text.

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Health - See Audio-Visual Catalog, pp. 5-6, p. 57, and p. 79, for filmstrips and motion pictures.

Safety - See Audio-Visual Catalog, p. 19 and p. 70, for filmstrips, motion pictures, and kits.

Unit II: The Insect World (3 weeks)

Text: Science in Your Life, pp. 1-29

Guide: Science in Your Life, pp. 360-381

Concepts and Percepts:

1. Insects constitute the largest animal group because they are adapted to many varied conditions.
2. Insects are found almost everywhere. There are many different kinds of insects.
3. Most insects have three pairs of legs, two pairs of wings, three body divisions, and an exoskeleton.
4. Insects have different kinds of mouths, used for biting, chewing, or sucking.
5. Insects go through three or four stages in their metamorphosis.
6. Some insects are helpful to man; some are harmful.

Vocabulary for the Unit:

metamorphosis	larva	cocoon
head	caterpillar	nymph
thorax	maggot	social insect
abdomen	molt	mimic
antenna	pupa	nectar
exoskeleton	chrysalis	pollen
queen bee	drone	worker bee
boll weevil	corn borer	

Materials and Equipment Needed for Experiments:

old sheet	piece of raw beef
large jars	cream bottle
sand or soil	*funnel
leaves and twigs	*cotton
cloth cover	*nail file
grasshopper and/or cricket	paper clip
*magnifying glasses	quart jar
*2 jars	black paper
aluminum foil	*rubber bands
*modeling clay	piece of ripe banana
*2 small aluminum pie tins	

*Included in Lab Stack equipment

Workbook Pages:

Now Try This, pp. 1-10

Achievement Test:

Chapter 1, pp. 1-6 in Test Booklet

Books for Children:

See Guide, pp. 376-379

Books for Teachers:

See Guide, pp. 379-380

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

Insects: Man's Greatest Rival

FS-1J69

Other Filmstrips:

Ants, Bees, and Wasps	FS-1C15
Beetles	FS-1C18
Black Widow Spider	FS-E37
Bugs and Their Relatives	FS-1C16
Butterflies Grow	FS-K30
Butterflies	FS-A47
Flies and Mosquitoes	FS-1C19
Grasshoppers and Their Relatives	FS-1C14

Honey Bees
Insects
Man Against Insects
Moths and Butterflies
Primitive Insects

FS-C45
FS-D15
FS-E20
FS-1C17
FS-1C13

Kits:

Tropical Butterflies
The Ants
The Bees
Zoology D - Insects

Kit 21G
Kit 21M
Kit 21N
Kit 60

Motion Pictures:

Secrets of the Ants and Insects
Secrets of the Bee World

MP 28
MP 249

Picture Set:

Honey Bees

PS-15

Transparencies:

Survival Devices (Insects)
Monarch Butterfly Cycle
Protective Color and Shape

TR 401
TR 402
TR 403

Unit III: Plants and Seeds (2 weeks)

Text: Science in Your Life, pp. 30-49

Guide: Science in Your Life, pp. 382-395

Concepts and Percepts:

1. The function of a flower is to produce seeds.
2. The most important parts of a flower are the stamens, pistil, and petals.
3. Ovules must be fertilized by pollen in order to produce seeds.
4. Seeds may have one or two cotyledons.
5. Seeds are transported by wind, water, animals, and gravity.

Vocabulary for the Unit:

pistil
stamen
ovary

ovule
pollen
pollination

fruit
cotyledon
seed

Materials and Equipment Needed for Experiments:

one flower per pupil
*straight pins
*magnifying glasses
white paper
pencils
cellophane tape
rulers
*glass slides with covers

*medicine droppers
water
6 lima beans
3 small paper cups or flowerpots
sand or soil
cardboard box
stamens from different flowers

*Included in Lab Stack equipment

Workbook Pages:

Now Try This, pp. 11-19

Achievement Test:

Chapter 2, pp. 7-12

Books for Children:

See Guide, pp. 390-393

Books for Teachers:

See Guide, pp. 393-394

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

How Plants Spread and Reproduce

FS-1J68

Other Filmstrips:

American Flowers

FS-C12

Climate and Plants

FS-B17

Finding Out About Seeds, Bulbs, and Slips

FS-W21

How Seeds Travel

FS-1F100

Plants Grow and Change

FS-K28

Seeds

FS-G23

Motion Pictures:

Plant Life at Work

MP-26

Let's Watch Plants Grow

MP-211

Kits:

Study of Plant Growth

Kit 16

Botany B - Flowers

Kit 61

Botany D - Stems and Roots

Kit 63

Picture Set:

Flowers

PS-22

Transparencies:

Seeds

TR-407

Unit IV: Molecules of Matter (4 weeks)

Text: Science in Your Life, pp. 50-91

Guide: Science in Your Life, pp. 396-423 and 543-546

Concepts and Percepts:

1. All matter is made up of atoms and molecules. These are arranged in specific patterns and are in constant motion.
2. Matter may exist as a solid, a liquid, or a gas.
3. In solids, molecules move as though locked together; in liquids, the molecules slide and roll over each other and are easily pushed apart; in gases, molecules are farther apart than in solids or liquids, and they vibrate faster.
4. A rise in temperature causes molecules to vibrate faster.
5. Air is composed of molecules of nitrogen, oxygen, and small amounts of other gases. We need oxygen for breathing.
6. Air molecules exert pressure. This pressure can be put to work.

Vocabulary for the Unit:

molecule	boiling	vibration
atom	dissolving	attraction
state of matter	solution	condensation
evaporation	hypothesis	gas
solid	liquid	nitrogen
oxygen	respiration	air pressure
piston	brake shoe	compressed air

Materials and Equipment Needed for Experiments:

*bowl	*3 jars
water	*balloon
5 dye tablets (vegetable)	rulers
*2 small dishes	*drinking glass
ice cubes	short strip of paper
*tin can	glass tube (available from stock)
cardboard cover	rubber stoppers (one hole)
paper napkins	bottle
small towel	books

*Included in Lab Stack equipment

Workbook Pages: Now Try This, pp. 20-38

Achievement Test: Chapter 3, pp. 13-18

Books for Children: See Guide, pp. 420-421

Books for Teachers: See Guide, pp. 421-422

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

Molecules

FS-1J67

Other Filmstrips:

Air

FS-All

Motion Pictures:

Air Around Us

MP-1

Atomic Energy

MP-5

Introducing Atoms and Nuclear Energy

MP-234

Transparencies:

Observing and Inferring (Part I)

TR-404

Observing and Inferring (Part II)

TR-405

Particles of Matter

TR-408

The States of Matter

TR-409

Unit V: Causes of Weather (3 weeks)

Text: Science in Your Life, pp. 92-123

Guide: Science in Your Life, pp. 424-441

Concepts and Percepts:

1. The weather changes constantly. A major cause of this is unequal heating of the surface of the earth.
2. The sun is the ultimate cause of all weather on earth.
3. Water heats up and cools off more rapidly than land. This causes land and sea breezes.
4. Light energy does not become heat energy until it strikes an opaque substance.
5. Winds are caused when cooler air displaces warmer air.
6. Winds help to even out the temperature of the earth.
7. Clouds and fog are caused by condensation of water vapor.
8. Rain, hail, and snow come from water vapor in the air.

Vocabulary for the Unit:

temperature
Fahrenheit
temperature range
cloud
dew
water vapor

transparent
conduction
land breeze
sea breeze
frost
sleet

rain
fog
snow
hail
condensation
water cycle

Materials and Equipment Needed for Experiments:

*thermometers
*2 bowls
*measuring cup
watch
water
*2 jars
tissue paper
aluminum foil
dry soil
drinking straws
piece of paper
paper clips

pencils
*pins
cellophane tape
milk bottle
ice cubes
hot water
cube of sugar
blocks
rulers
milk cartons
*magnifying glasses

*Included in Lab Stack equipment

Workbook Pages: Now Try This, pp. 39-47

Achievement Test: Chapter 4, pp. 19-24

Books for Children: See Guide, pp. 436-439

Books for Teachers: See Guide, pp. 439-440

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrips:

Sunlight and the Earth's Temperature	FS-1J66
Water and Life	FS-1J65

Other Filmstrips:

Weather and Climate	FS-1A1
Weather Fronts and Forecasting	FS-1A9
Changes in Weather	FS-J38
Hot and Cold Places	FS-K39
The Sun	FS-24
Understanding Weather Conditions	FS-J39
We Learn About Weather	FS-J37
Along the Equator in Ecuador	FS-Y5

Motion Pictures:

How Sunshine Helps Us	MP-210
Weather for Beginners	MP-212

Picture Sets:

Weather Instruments	PS-42
Cloud Formations	PS-45
Weather Phenomena	PS-57

Transparencies:

Observing and Predicting (Weather)	TR-406
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Unit VI: Climate and Living Things (4 weeks)

Text: Science in Your Life, pp. 125-173

Guide: Science in Your Life, pp. 442-459

Concepts and Percepts:

1. Climate is the type of weather a place has over a long period of time.
2. The Arctic and Antarctic regions have a polar climate.
3. The areas between the Tropic of Capricorn and the Tropic of Cancer have a tropical climate.
4. The middle latitudes have a temperate climate of four seasons.
5. Temperature is influenced by altitude and nearness to large bodies of water.

Vocabulary for the Unit:

Antarctic
Arctic
climate
polar climate
angle
cold-blooded
algae
tropics
equator
desert
rain forest

Antarctic Circle
Arctic Circle
North Pole
South Pole
degree
mineral
bacteria
Tropic of Cancer
Tropic of Capricorn
rain gauge
altitude

orbit
earth's axis
temperature
adaptation
warm-blooded
I. G. Y.
food chain
tropical climate
savanna
transparent
middle latitudes

Materials and Equipment Needed for Experiments:

half of a hollow rubber ball
globe
*flashlight or filmstrip projector
3 pieces of dark-blue paper
cellophane tape
*2 pieces of stiff wire (or pipe cleaners)

2 pieces of cardboard
*2 thermometers
2 pieces of black paper
piece of white paper
strong electric-light bulb

*Included in Lab Stack equipment

Workbook Pages:

Now Try This, pp. 48-58

Achievement Test:

Chapter 5, pp. 25-30

Books for Children:

See Guide, pp. 455-457

Books for Teachers:

See Guide, pp. 457-459

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

Sunlight and the Earth's Temperature

FS-1J66

Other Filmstrips:

The Sun

FS-24

Alaska, the Land and Its People

FS-A12

Simon and Lucy of Alaska

FS-X52

Great American Desert

FS-K8

Hot and Cold Places

FS-K39

Survival in the Desert

FS-K9

Mammals of the Desert

FS-K11

Climate and Plants

FS-B17

Latitude and Longitude: Finding Places and
Directions

FS-1-B46

Latitude and Longitude: Time Zones and
Climate

FS-1B47

Locating Places on Maps

FS-X23

Maps: What They Are

FS-1B44

Map Symbols and Terms

FS-1B45

Globes: Our Most Accurate Maps

FS-1B48

Maps: Their Types and Uses

FS-1B49

Motion Pictures:

Causes of the Seasons

MP-232

Picture Set:

Polar Regions

PS-47

Transparencies:

Climatic Adaptations (Animals)

TR-410

Climatic Adaptations (Plants)

TR-411

Unit VII: Water and Living Things (5 weeks)

Text: Science in Your Life, pp. 175-217
Going on Ten, pp. 84-113

Guide: Science in Your Life, pp. 460-477 and 547-551
Going on Ten, pp. 84-113

Concepts and Percepts:

1. Water is necessary for all living things. Water exists in all three states.
2. All living things are made of cells. Cells require water and food.
3. The heart, blood, and blood vessels are responsible for the transportation of materials in the body.
4. The body has several ways of removing waste materials.

Vocabulary for the Unit:

H ₂ O	cell membrane	capillary
dissolve	microscope	circulatory system
tracer	heart	pulse
blood	vein	stethoscope
cell	windpipe	pulse rate
circulation	digestive system	lungs
digestion	kidneys	small intestine
large intestine	sweat glands	urine
bladder	perspiration	pores

Materials and Equipment Needed for Experiments:

large potato	coat hanger
apple	soil
*scale	paper towel
*2 dishes	sugar
food coloring	onion
dry soil	*slides
water	*eye dropper
cup	microscope
*tablespoon	thumbtack
heavy paper	papier-mache
*3 jars	stethoscope (if possible)
3 stalks of celery	*cotton
*2 flowerpots	warm water
flowering plant	*thermometer
aluminum foil	

*Included in Lab Stack equipment

<u>Workbook Pages:</u>	<u>Now Try This</u> , pp. 59-68
<u>Achievement Test:</u>	Chapter 6, pp. 31-36
<u>Books for Children:</u>	See Guide, pp. 473-475
<u>Books for Teachers:</u>	See Guide, pp. 475-476

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

Water and Life	FS-IJ55
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Other Filmstrips:

How the Heart Works	FS-C47
How We Breathe	FS-C50
How We Hear	FS-C52
How We Produce Speech and Sound	FS-C53
How We See	FS-C54
How Your Ears Work	FS-L50
Your Bones and Muscle	FS-L54
Your Eyes at Work	FS-L49
Your Food and Digestion	FS-L53
Your Heart and Lungs	FS-L55
Your Nose and Throat	FS-L51
Your Skin and Its Care	FS-L52
Your Teeth and Their Care	FS-L48
We Grow	FS-K34

Motion Pictures:

Heart, Lungs and Circulation	MP-222
Muscles and Bones of the Body	MP-223
Our Senses: What They Do For Us	MP-224
The Human Machine	MP-18

Kits:

Human Anatomy Kit	Kits 66-67
Eye, Ear and Heart Model	Kit 68
Your Child's Health and Fitness	Kit 72
Micro-Organisms	Kit 113
Elementary Microscope Slide Kit	Kit 114

Transparencies:

Cell Structure	TR-412
Reproduction of Fission (Amoeba)	TR-413

Unit VIII: Force and Moving Things (4 weeks)

Text: Science in Your Life, pp. 219-253

Guide: Science in Your Life, pp. 476-503

Concepts and Percepts:

1. All movement is the result of a force overcoming a resistance.
2. Friction may be either helpful or harmful.
3. Work is done when something is moved by a force.
4. Friction can be reduced by using rollers, wheels, bearings, or lubricants.
5. For every action there is an equal and opposite reaction.
6. Flight can be maintained by using propellers or a jet engine. An airplane is kept aloft by forces on its wings.

Vocabulary for the Unit:

force	resistance	friction
axle	lubrication	ball bearing
roller bearing	drum brake	thrust
Newton's Third Law	propeller	jet
gravity	drag	Newton's Laws of Motion
lift	helicopter	

Materials and Equipment Needed for Experiments:

heavy book	*cardboard circle
paper clips	*20 marbles
*thin rubber bands	*2 coffee covers
*rulers	*modeling clay
cellophane tape	*jar with a screw top
rough board	soap
*pane of glass	water
fine sandpaper	*wind-up toy motorboat
*rough piece of stone	roller skates
mirror	2 large sheets of thick cardboard
*cotton	*balloons
blocks	magazine
sand	strip of paper
pencils	

*Included in Lab Rack equipment

Workbook Pages:

Now Try This, pp. 69-96

Achievement Test:

Chapter 7, pp. 37-42

Books for Children: See Guide, pp. 499-501

Books for Teachers: See Guide, pp. 501-502

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

Moving on Land, on Water, and in the Air FS-LJ70

Other Filmstrips:

Air Transportation	FS-Y25
Aeronautics	FS-A6
Aeronautics	FS-A7
Fifty Years of Flight	FS-C8
Mary Takes a Trip by Air	FS-K47
Queens Never Die (SS Normandie, life history)	FS-F36
Water Transportation	FS-Y24
Air Transportation	FS-Y25

Motion Pictures:

Air Around Us MP-1

Transparencies:

Force and Motion TR-414

Unit IX: Machines and Power (3 weeks)

Text: Science in Your Life, pp. 254-281

Guide: Science in Your Life, pp. 504-519

Concepts and Percepts:

1. Every machine is primarily designed to make work easier.
2. Wind, water, and steam can be used to do work.
3. Gasoline engines, diesel engines, and turbines are used to do work.
4. Work is done when a force moves something. A force is a push or pull.
5. Electricity can be generated in several ways and can be used in many ways.

Vocabulary for the Unit:

force	diesel engine	gravity
machine	turbine	steam engine
piston	nuclear fuel	cylinder
gasoline engine	crank	rod
internal-combustion engine	energy	electromagnet
external-combustion engine	alternating current	generator

Materials and Equipment Needed for Experiments:

paper boat with sail	*spool
paper boat without sail	teakettle
long cake pan	aluminum foil
water	hot
*rulers	*magnifying glasses
milk cartons	2 matches
pencils	*small medicine bottle with stopper
paper clips	*large nail or screw
*thread	dry cell
*aluminum pie plate	*3 feet of bell wire
*snap fasteners	large sheet of white paper
needles	*electric light

*included in Lab Stock equipment

Workbook Pages: Now Try This, pp. 97-106

Achievement Test: Chapter 8, pp. 43-48

Books for Children: See Guide, pp. 515-517

Books for Teachers: See Guide, pp. 517-518

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrip:

We Use Electricity

FS-1J64

Other Filmstrips:

Current Electricity

FS-B51

Distributing Electric Power

FS-B35

Magnetism and Electricity

FS-W26

Man's Use of Power

FS-J36

Using Atomic Energy for Electric Power

FS-P36

Levers, and Mechanics

FS-D49

Machines and Tools to Help Us Work

FS-W25

Motion Pictures:

Energy Does Work

MP-209

Energy and Its Form

MP-233

Unit X: Earth, Moon, and Space (3 weeks)

Text: Science in Your Life, pp. 282-315

Guide: Science in Your Life, pp. 520-539 and 552-555

Concepts and Percepts:

1. All satellites, natural or artificial, travel around the sun in fixed orbits.
2. The earth has one natural satellite, the moon.
3. Galaxies contain billions of stars. There are probably billions of galaxies.
4. The earth makes one rotation in 24 hours and one revolution around the sun in 365 1/4 days.
5. The moon reflects the light of the sun. This light is called moonlight.
6. The moon is about 1/4 the diameter of the earth. It has no atmosphere and cannot support life as we know it.
7. The moon and the sun influence our tides.
8. The planets move in fixed orbits around the sun.

Vocabulary for the Unit:

satellite
planet
rotation
glacier
spring tide

astronaut
solar system
revolution
tide

galaxy
universe
sphere
tidal day

Materials and Equipment Needed for Experiments:

globe
*ball
*cardboard circle
*electric light
2 cans
water
ice cubes

*2 thermometers
2 woolen mufflers
cardboard covers for cans
chalk
*spool
4 feet of thin wire
rubber eraser

*Included in Lab Stack equipment

Workbook Pages:

Now Try This, pp. 107-124

Achievement Test:

Chapter 9, pp. 49-54

Books for Children:

See Guide, pp. 534-536

Books for Teachers:

See Guide, pp. 536-538

MATERIALS AVAILABLE FROM AUDIO-VISUAL OFFICE

Heath Science Filmstrips:

The Moon, Our Neighbor in Space
Earth and the Other Planets

FS-1J61
FS-1J77

Other Filmstrips:

Looking at the Stars	FS-Z56
Changing Seasons	FS-1A2
The Sun's Family	FS-1A5
Constellations	FS-1A6
The Earth Satellite (A Man-Made Moon)	FS-1A7
Harnessing Solar Energy	FS-1A8
The Earth in Space	FS-W28
The Sun and Its Planets	FS-W29
Earth's Satellite -- The Moon	FS-W30
Comets and Meteors	FS-W31
Stars and Galaxies	FS-W32
Constellations	FS-W33
Work of Astronomers, Space Travel	FS-W34
The Moon	FS-S23
Sky Above Our Earth	FS-W24
The Stars	FS-S26
The Sun	FS-S24

Motion Pictures:

Beyond Our Solar System	MP-231
How Sunshine Helps Us	MP-210

Kits:

Universal Planetarium (Sun, Earth, and Moon)	Kit 36
Universal Solar System (Scientific Model)	Kit 37
Earth in Space (Flannel Board Cutouts)	Kit 17
The Solar System	Kit 21K
Rocket to the Moon	Kit 21F

Transparencies:

The Universe	TR-415
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APR FOURTH GRADE

Children in Fourth Grade should achieve some measure of success in working with each of these mediums.

Do not limit yourself to these suggestions. Try ways of your own. Encourage individuality of expression.

Always explore a medium before you present it to your group.

Crayon and Chalk	Painting - Tempera Finger Painting	Paper Cutting and Construction	Modeling Materials
1. Recognition of: a. Primary & secondary hues. b. Value (light and dark) c. Intensity (dull and bright) d. Warm and cool colors e. Intermediate hues 2. Knowledge of color chart construction. 3. Understanding of color harmonies a. Complementary b. Related 4. Awareness of effect of distance on color. 5. Ability to make tints and shades of colors 6. Recognition of variety in: a. Line d. Color b. Form e. Balance c. Texture 7. Knowledge of ways to manipulate chalk/crayon a. Side e. Chalk on wet paper b. End c. Color blending d. Shading (light & dark) 8. Ability to use variety in techniques a. Etching c. Crayon resist b. Stenciling	1. Tempera a. Ability to handle tools and materials correctly b. Ability to mix: secondary colors; tints & shades c. Understanding of stenciling process d. Increasing efficiency in the use of block printing, potato printing and sponge painting e. Understanding of spatter paint techniques f. Increasing ability to use color harmoniously and interpretively 2. Finger painting a. Ability to: (1) Prepare materials (2) Control medium (3) Experiment freely with hand and arm movement b. Ability to compose harmoniously within a space by using: (1) Variety (2) Texture (3) Repetition (4) Balance c. Increasing ability to: sense, feel and express rhythm	1. Cutting block letters 2. Cutting designs free-hand using several folds 3. Constructing forms from a. Folding and cutting b. Circles and cones c. Strips and tubes 4. Contour cutting 5. Cutting freehand parts and assembling 6. Constructing in 2- & 3-dimensions with a variety of materials: a. Spools d. Beads b. Tubes e. String or c. Boxes yarn 7. Constructing various types of folders and booklets 8. Increasing ability to choose harmonious colors of paper 9. Ability to manipulate paper by: a. Fringing b. Notching c. Curling d. Scalloping 10. Making paper sack dolls and animals	1. Ability to manipulate clay by: a. Rolling b. Pressing c. Squeezing d. Pinching 2. Ability to: a. Model in round b. Build with coils c. Model in relief (tile) 3. Increasing ability to model substantial pieces that are not easily broken. 4. Ability to manipulate papier mache a. Modeling over crushed newspaper form b. Modeling over objects 5. Modeling with sawdust clay (sawdust, flour, & water) 6. Knowledge of various ways of decorating modeled objects: a. Painting b. Incised line c. Embossing

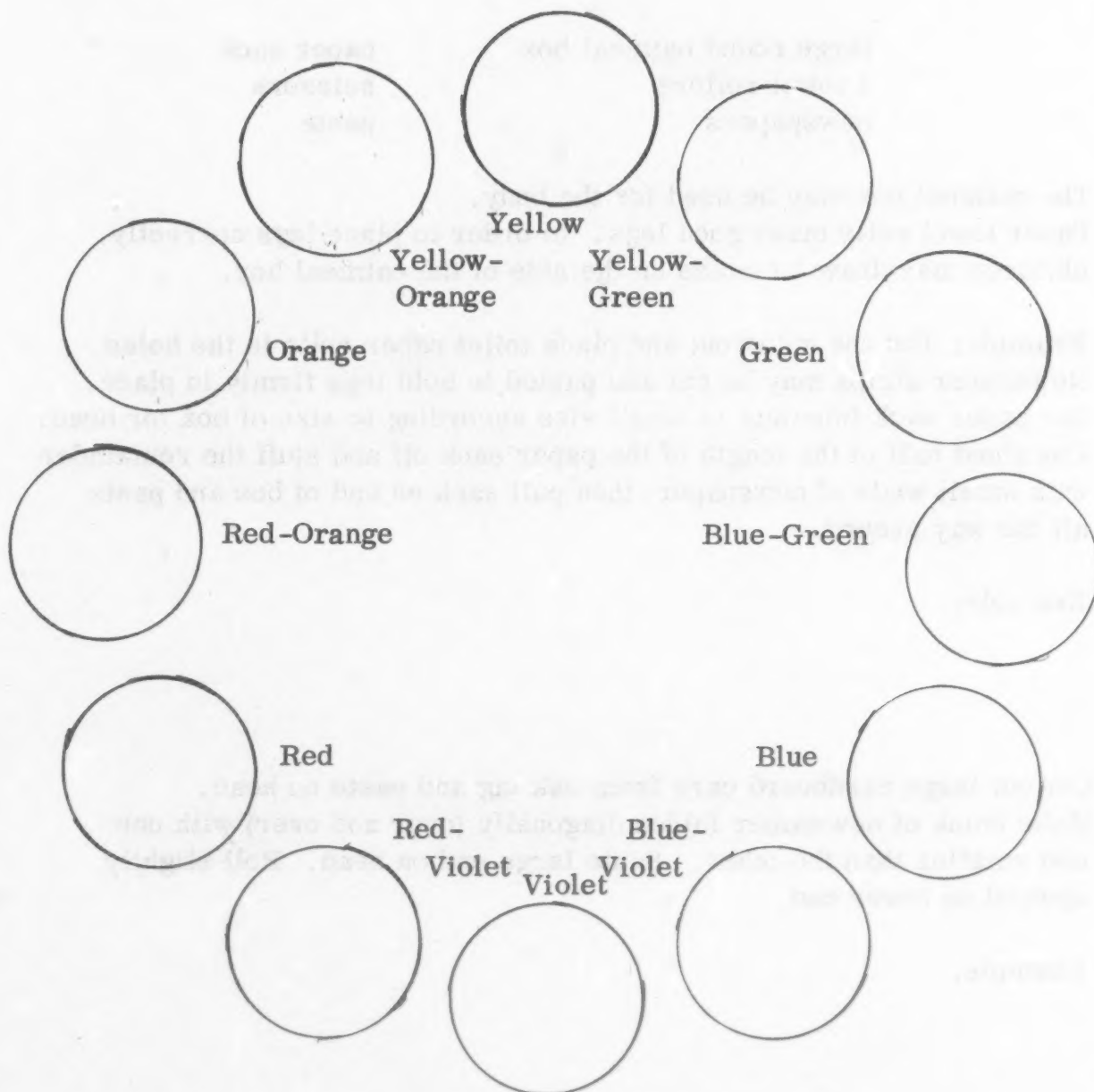
SUGGESTED PROCEDURES

Crayon and Chalk	Painting - Tempera Finger Painting	Paper Cutting and Construction	Model Materials
1. Repeated review of crayon manipulation; side end, point. 2. Review of various types of lines, shapes, forms and textures. 3. Experiment with color blending by: a. Rubbing one color over another. b. Varying value by rubbing white and black over color to get tints and shades 4. Demonstrate: a. Stencilling (crayon and chalk). b. Making crayon etching. c. Using tempera wash over crayon. 5. Correlate with other subject by making: a. Class books b. Dioramas c. Maps and charts d. Murals e. Wall hangings and crayon on cloth pressed with warm iron 6. Experiment with chalk on wet paper.	1. Experiment with tempera on dry and wet paper (free blending of color). 2. Select one of the color families to use in making pictures or designs. Use some light, some dark values. Add one color for contrast. 3. Show how to make all-over signs and borders with: a. Potato prints b. Block prints c. Corks or spools d. Sponges 4. Demonstrate: a. Stencilling b. Spatter painting <u>Finger Painting</u> 1. Protect clothes with aprons or old shirts worn backwards. 2. Group desks in fours; equip each group with water, paint and sponge. 3. Have children write name on dull side, wet that side, then shiny side, adding few drops of extra water. 4. Sprinkle paint over paper; smooth; experiment with variety of hand and arm movements. Standing permits greater freedom of movement. 5. Use shelf paper cut in convenient lengths for experimentation. 6. Press fingerpaintings with warm iron on dry paper.	1. Use magazines, newspaper, or wallpaper for experimentation whenever possible 2. Show how to curl, fringe, notch, scallop etc. to construct flowers, leaves, manes, tails for paper sculpture flowers, animals and birds. 3. Show how to cut capital letters from rectangles of desirable size. Use a straight strip of paper as a guide. ("M" and "W" are wider than other letters. The number "5" is inverted "2". The number "9" is inverted "6". 4. Design and cut on several folds to make: a. Repeat borders b. All-over design 5. Encourage the use of imagination and inventiveness in constructing animals, figures and forms from towel roller, boxes, spools and other salvage materials. 6. Construct mobiles using cost hanger pulled into circular shape. Suspend forms by threads. Build paper sculpture flowers or grass at bottom of circle made by wire hanger to balance the mobile.	1. Use newspaper to protect all working surfaces. 2. To mix powder clay: a. Allow 1/2 lb. for each child. b. Mix to consistency of putty 24 hrs. in advance of class time. c. Cover with wet cloth and newspapers. 3. Show how to: a. Work from whole b. Add parts c. Dry out clay that is too wet by rolling on newspapers. d. Smooth cracks with finger dipped in water. 4. Demonstrate: a. How to work with papier mache. b. How to work with sawdust clay. 5. Encourage individuality in all modeling as well as in the decoration of objects. Art Committee: Edith Jenaway Thurma Johnston Sara M. Fitz Esther L. Petch

Crayon and Chalk	Painting - Tempera Finger Painting	Paper Cutting and Construction	Modeling Materials
- Construct large color chart for room. Make movable hands that will automatically point to various color harmonies (See attached color chart.) - Make side crayon design. - Put leaf, or cut paper from under newsprint. Rub over paper with side crayon. - Experiment with other textures by crayoning over corrugated paper, screening, sandpaper, etc. - Design borders and all-over surface patterns to decorate: - Charts and maps - Booklets - Gift wrapping paper - Boxes for gifts or storage - Table mats - Greeting cards - Design wall hangings - Thumb tack section of cloth to bulletin board protected with paper. - Trace design or stencil on cloth. - Crayon one section at a time. - Press on wrong side to set color. - Do lettering for: - Signs - Posters - Labels - Maps and charts	- Paint from memory, observation and imagination - Illustrate: - Individual booklets - Murals - Class project books - Autobiographies - Original stories - Do imaginary scenes with tempera on wet paper. - Drop several colors of tempera including white, on wet paper. Tip to make interesting color patterns. Look for suggested forms. - When dry outline forms lightly with black tempera. - Paint clay and papier mache objects. Shellac makes a nice finish when used over tempera. - Use spatter painting and block printing for: - Greeting cards - Booklet covers - Wall hangings - Use finger painting for: - Picture mounts - Booklet covers - Strips for weaving - Greeting cards (cut out prettiest section of finger painting to mount on card). - Use for cut-out: - Flowers - Animals - Scenery - Cover boxes or cans for gifts.	- Make portfolios for art work (finished size 12 x 18") - Make booklets of various types: - Single fold - Loose leaf - Accordion fold - Pop-up - Build dioramas (assemble figures in 3-sided box). - Make figures and models for shadow plays or story illustration - Make masks, costumes, props for dramatizations. - Make simple looms out of cardboard. Use yarn or narrow rags for weaving. - Cut letters for posters, signs, bulletin board. - Make cut paper and box construction models in correlation with social studies. - Make baskets, favors, place cards, etc. for room parties.	- Clay (water base) correlate with social studies by making: - Animals - Pottery - Tiles - Figures in diorama - Papier Mache - Correlate with special days by making: - Halloween masks - Columbus' ships - Christmas tree decorations - Easter rabbits - Correlate with social studies by making: - Fruits and vegetables - Animals - Bowls & plates - Puppet heads - Indian rattles - Sawdust Clay - Construct animals, figures, or objects - Make ornaments for Christmas trees - Use in construction large maps - Make puppet heads - Paint modeled objects with tempera. Shellac when dry.

American Crayon Co.
Sandusky, Ohio

COLOR CHART



Complementary



Split
Complementary



Double-Split
Complementary



Triad



Related

Box Animals

1. Have one or more box animals to show the children.
2. Encourage discussion on different ways the animals might have been constructed.
3. Show the class how to make an animal out of boxes. To construct an elephant, you might need:

large round oatmeal box
4 towel rollers
newspapers

paper sack
scissors
paste

- (a) The oatmeal box may be used for the body.
- (b) Paper towel rolls make good legs. In order to place legs correctly, children may draw 4 circles on the side of the oatmeal box.

Example: Cut the holes out and place toilet paper rolls in the holes. Newspaper strips may be cut and pasted to hold legs firmly in place.

- (c) Use paper sack (medium to small size according to size of box for head. Cut about half of the length of the paper sack off and stuff the remainder with small wads of newspaper; then pull sack on end of box and paste all the way around.

Example:

- (d) Cut out large cardboard ears from oak tag and paste on head.
- (e) Make trunk of newspaper folded diagonally (over and over) with one end smaller than the other. Paste large end on head. Roll slightly upward on lower end.

Example:

- (f) Make tail of part of a paper towel, folded, pasted, then slightly twisted. Paste on end of box.
- (g) If there are bright colors on the box, strips of newspaper may be pasted over the entire box to keep colors from showing through when painted.
- (h) After animal is entirely dry, it may be painted with appropriate colors of tempera paint. The eyes, nose, mouth, etc., may be painted with black.

Suggested Use of the Skill

1. Many kinds of box animals may be made by using these same principles, by the use of different sizes of boxes and different decorations and trimmings. Animals of this type are especially useful in circus units, animals of other countries, conserving natural resources, animals used in transportation.

Papier Mache'

Easter Rabbit (sitting down). The same process will make other animals.

I. Materials and Tools

Newspapers
Wallpaper paste
Paint pans
String
Tempera paint
Brushes

II. Teacher's Preparation

Cut newspapers into about 1" strips.
Mix wallpaper paste (put paste and water in a large jar and shake it).
Cut strings into lengths of about 18" for the body and 12" for the head.

III. Responsibility of children in preparing for lesson

1. Children cover desks with large piece of newspaper. (Four children make a table with their desks.)
2. Children help pass out newspapers, string, and paint pans of wall-paper paste.

IV. Steps in the process

(A simple demonstration by the teacher is necessary so that the children will know how to make the skeleton or armature and how to apply the strips of paper.)

Step 1 - For the foundation for the skeleton of the rabbit, take four sheets of large size newspaper, opened full size. Place your fist in the center of the paper. Put each corner into the center rolling each corner of the paper toward the center very tightly. Tie the body securely with the long string. Build up hollow spots and cover with four layers of the strips of paper which have been pulled through the paste pans.

Step 2 - For the head, take two sheets of small size newspaper and roll tightly as the body was rolled and tied. Leave a hollow place in the head where a stick is placed to join the head to the body after the head has been covered with four layers of the paper strips covered on both sides with paste.

Step 3 - The stick is placed in the hole left in the head and pushed into the body. Several strips of paper with paste on it are put on around the lower part of the head and neck to hold the head firmly to the body. The tail is made by crushed paper pasted to the body.

Step 4 - The ears are shaped and cut from four pieces of paper which have been pasted together. Allow at least a day for the rabbit to dry.

Step 5 - The rabbit is painted pretty, bright Easter colors of tempera. When this is dry, add markings and features of tempera. Whiskers can be made from wire, toothpicks, or paper strips.

Clean-up activities: One group at a time fold newspapers that have been protecting their desks to be sure that surplus paste or paper scraps are not spilled on floor. Bring papers to the basket and paste pans to a collection center.

Have a clean-up committee collect unused paper strips and wash paste pans. Children should rearrange desks into their regular order.

For best results - Have children remain in their seats at all time. Paste and paper monitors will keep them supplied with working materials.

Keep the length of the working period within reasonable limits.

PHYSICAL EDUCATION PROGRAM

Fourth Through Sixth Grade

Growth is a continuous process - an emerging - an unfolding. At no time does a child abruptly complete a particular stage of development and begin the next. Neither is there a time when all children in a group are at exactly the same stage of growth.

Any classification into groups along the route of growth is artificial. The following chart is merely a device to help give a picture of activities that seem to suit the changing needs of children. The subdivisions and classifications used serve as convenient labels for periods of growth through which children gradually move, each child holding to a path that is his alone.

What They Are Like	What They Need OPPORTUNITIES	What To Do
They grow steadily in muscles, bone, heart and lungs.	To engage in strenuous activity that regularly taxes these organs to the limits of healthy fatigue.	Running, jumping, climbing, and hard play.
They enjoy rough and tumble activities.	To participate in activities which use the elements of roughness.	Bumping, pushing, contact activities such as: King of the Ring, Poison Pen, Indian Wrestle, Hand Wrestling, Beater Goes 'Round.
Sex differences begin to appear with girls taller and more mature than boys. Sex antagonisms may appear.	To enjoy their roles as boys and girls, to have wholesome boy-girl relationships in activities & to participate separately for some activities.	Activities such as, folk dances, mixers, squares; Modern, Brothers and Sisters, Last Couple Out. Group games such as, Volley ball type games, Newcomb or Fist ball, Soft ball. Others may be enjoyed separately or together.
They respond differently in varying situations.	To participate in a wide range of activities and organization, using many kinds of materials.	Individual, dual, or small and large group activities such as, swimming, tumbling, stilts, track, catch, handball, relays, Crows & Cranes, Crackers, Bombardment. Folk dances, mixers, and simple square dances such as, Csebogar, Captain Jinks, Life on the Ocean Wave.

What They are Like	What They Need OPPORTUNITIES	What To Do
They have a strong sense of rivalry and crave recognition.	To succeed in activities that stress cooperative play along with activities that give individual satisfaction.	Self-testing activities such as, track events, stunts, chinning, sit-ups, push-ups, ball throwing, for distance & accuracy. Group and team play such as, Newcomb, Kickball, Circle or Square Soccer, End Ball, Club Snatch, Progressive Dodge Ball.
They may show increasing independence and desire to help.	To plan, lead, and check progress.	Assist with officiating; serve as squad leaders; act as scorers; help with equipment; elect captains; help with younger children and each other.
They want to be liked by their own classmates, to belong. They have a strong loyalty to teams, groups or "gangs".	To belong to groups, to be on many kinds of teams. To engage in a wide range of activities.	Group games such as, Bounce Volleyball, Line Soccer, Keep Away, Hit Pin, Kickball, Net Ball. Partner play such as, Deck Tennis (Ring Toss), Tennis, Aerial Darts, Horseshoes.
They want approval but not at the expense of their group relationships.	To gain respect and approval of others.	Participate in activities in which they achieve in the eyes of their group.

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